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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,360	03/26/2004	Kenjiro Hori	03500.017985	7573
5514	7590	03/09/2006	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			HOANG, TU BA	
			ART UNIT	PAPER NUMBER
			2832	

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/809,360

Applicant(s)

HORI, KENJIRO

Examiner

Tu Ba Hoang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

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***Response to Arguments/Amendments***

Applicant's arguments filed December 15, 2005 have been fully considered but they are not persuasive as for the following reasons:

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, there is insufficient antecedent basis for "said heater" recited at line 7 in the claim. It is also unclear if the later recited "a heater" at line 8 to be the same as such "said heater". Clarification is needed.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 9-13, 15, and 19-20 as amended are rejected under 35 U.S.C. 102(b) as being anticipated by Okabayashi et al (US 6,037,576). Okabayashi et al shows all features of the claimed invention including an image forming apparatus (Figure 1) comprising a fixing device having a heater 2 driven by a heater drive circuit (shown in Figure 2) which comprises a current detector 29 for detecting a value of a current across an AC power supply line that is supplied from an AC power supply 21, a full-wave rectifier 22 for full-wave-rectifying an AC voltage on the AC power supply, a switching device 25 for switching a supply of the full-wave rectified voltage from the rectifier at a high frequency to the heater, a voltage detector 28 for detecting a voltage applied to the heater (i.e., peak or average value), a heater control unit 27 for ON/OFF controlling the switching device 25 on the basis of the current value detected by the current detector and the voltage value detected by the voltage detector, a filter 23,

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wherein the switching device 25 includes a switching transistor and a current retaining diode connected to the switching transistor.

Claims 1-20 as amended are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuo et al (US 6,930,293) cited in the previous Office Action. Matsuo et al shows all features of the claimed invention including an image forming apparatus (Figures 1 and 15) comprising a fixing device 104 or 213 or 2113 having a heater 121 or 2114 driven by a heater drive circuit 102 or 2602 which comprises a current detector 129 or 2122 for detecting a value of a current across an AC power supply **line** 127 or 2112 that is supplied from an AC power supply 105 or from points 2101, a full-wave rectifier 110 or 2104 for full-wave-rectifying an AC voltage on the AC power supply, a switching device 101 or 2111 for switching **a supply of** the full-wave rectified voltage from the rectifier at a high frequency **to the heater** 121 or 2114, a voltage detector 120 or 2115 for detecting a voltage applied to the heater (i.e., also the target voltage set for the setting circuit 2125), a heater control unit 103 for ON/OFF controlling the switching device on the basis of the current value detected by the current detector and the voltage value detected by the voltage detector, a filter 107, wherein the current detector is constructed of a current transformer as shown that is interposed in series in the AC power supply line and a rectification circuit 117,118 connected the output winding of the transformer, the switching device includes a switching transistor 115,116 and a current retaining diode 117,118 connected to the switching transistor, a storage device or CPU 135, wherein the ON/OFF duty cycle is increased gradually when starting the heater operation (as set ON from OFF (i.e., warm-up) and is controlled so that the current value detected is held to a predetermined value at a point of time since starting of the operation.

Claims 1-3, 9-13, and 19-20 as amended are rejected under 35 U.S.C. 102(a & e) as being anticipated by Kinouchi et al (US 6,868,249). Kinouchi et al shows all features of the claimed invention including an image forming apparatus (see at least Figures 7-10, and 15) comprising a fixing device having a heater driven by a heater drive circuit which comprises at least a **current detecting means** 101 including a current detector 103 for detecting a value I of a current across an AC power supply line that is supplied from an AC **power supply** 100, a **full-wave** rectifying means or full-wave rectifier 110 (column 4, lines 54-67) for full-wave-rectifying an AC voltage on the AC power supply **line** (column 5, lines 1-23), **switching means including contacts** 117,118,119 for switching **a supply** of the full-wave rectified voltage from the full-wave-rectifying means or rectifier 110 (column 3, lines 64-67, i.e., in accordance with the opening and closing of the contacts and column 5, lines 1-23) **to the heater** at a high frequency, voltage **detecting means** or section 131 for detecting an average or a peak value of the voltage applied to the heater to be driven (column 5, lines 49-51, i.e., detecting the level of rectified voltage outputted from the rectifier circuit 110 which is used to drive the heater), heater control means or CPU 130 for ON/OFF controlling the switching means 117,118,119 on the basis of the current value detected by the current detecting means 101 and the voltage value detected by the voltage detecting means

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131 (column 5, lines 57-65), filter means or high-frequency circuit 120 for removing a high frequency component contained in the switching output by the switching means 117, 118, 119 (column 4, lines 57-59 and column 5, lines 24-39), and a storage device shown in Figure 6. Regarding claims 6-8 and 16-18, the characteristics recited in the claim are considered merely functional and operational languages in which they are conventionally known during operation of the printer and since all of the claimed features are taught by Kinouchi et al, such functional and operational languages as noted in claims 6-8 and 15-18 would be inherently shown by the prior art.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4-8 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinouchi et al in view of Suzuki et al (US 5,331,534). Kinouchi et al discloses all features of the claimed invention as set forth above except for the current detecting means is constructed of a current transformer interposed in series in the AC power supply line and a rectification circuit connected to an output winding of the current transformer, the switching means includes a switching transistor and a current retaining diode connected to the switching transistor, and changes an ON/OFF duty of the switching transistor. It is noted that the use of current detecting means and switching means having such constructions is old and well known in the art, as evidence, Suzuki et al shows such current detecting means is constructed of a current transformer 22 interposed in series in the AC power supply line and a rectification circuit 23 connected to an output winding of the current transformer and switching means includes a switching transistor 32 and a current retaining diode 34 connected to the switching transistor 32 for changing an ON/OFF duty of the switching transistor. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Kinouchi et al the current detecting means and switching means having the constructions taught by Suzuki et al in order to detecting the received input current from the AC supply source while controlling the switching duty cycle of the rectifier circuit if so desired. Regarding claims 6-8 and 16-18, the characteristics recited in the claim are considered merely functional and operational languages in which they are

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conventionally known during operation of the printer and since all of the claimed features are taught by Kinouchi et al in view of Suzuki et al, such functional and operational languages as noted in claims 6-8 and 15-17 are inherently shown by the prior arts.

### **REMARK**

As the claims being amend causes the rejection of claims 1-10 under 35 USC 112, second paragraph set forth above.

In response to Applicant's argument that in Matsue et al, "the detected current is **not** a current **across** an AC power **supply line** but a peak value of current in the coil 120 and thus, the electrical current across the AC power supply line that is not detected and therefore cannot control a device driven by the current. Matsuo et al. therefore fails to teach or suggest the advantageous features of the invention in which a voltage applied to a heater is to be driven by detecting means and a switching means is controlled by heater control means on the basis of the current value detected by the current detecting means and the voltage value detected by the voltage detected means" (emphasis added). The Examiner disagrees and takes the position that is whether the detected value of the current is a peak value or others (i.e., average value ) is irrelevant to whether or not there is a "current detecting means for detecting a value of a current across an AC power supply **line** that is supplied from an AC power supply" shown by Matsuo et al. As indicated the rejection set forth above, Matsuo et al. does in fact describe the current detecting means 127 coupled to the supply "**line**" of the AC supply source 105 for detecting the value of current across the AC source.

In response to Applicant's argument that in Kinouchi et al. , a switching element is used for the **coil 41 which is not a heater**. In use for a coil, an appropriate voltage has to be applied with dependence on a resonance frequency in each condition. Therefore, in Kinouchi et al., a full wave rectified voltage is not supplied to a switching means. Accordingly, the voltage detecting section 131 is not used for a voltage applied to a heater to be driven and does not correspond to the voltage detector of the present invention" (emphasis added). The Examiner disagrees as for the reason that the coil 41 is in fact the heater or at least part of the heating roller 31 (i.e., induction **heating** coils noted at column 3, lines 37-38) and it is clear that the full wave rectified voltage from the full-wave rectifying means 110 is supplied to the switching means as described in great detail set forth in the rejection.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

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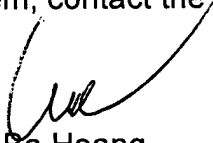
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-Thu from 8:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu Ba Hoang  
Primary Examiner  
Art Unit 2832

March 01, 2006